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A Survey of Land Owners in Manitoba Regarding Establishment of Private Land Forestry Management Programs

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A SURVEY OF LANDOWNERS IN MANITOBA REGARDING ESTABLISHMENT OF PRIVATE LAND FORESTRY MANAGEMENT PROGRAMS

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PREFACE

The wise use of natural resources is dictated by supply/demand considerations, fiscal and human resources and circumstances at a given time. The presence of the great boreal forests of Canada, the eastern hardwood forests and the western softwood industry has generally overshadowed the small woodlots of the agricultural region of Manitoba. Tree quality in southern Manitoba often was limited, and supply was unevenly distributed. Forests often were viewed as simply an impediment to agricultural expansion. They were, however, proximal sources of fuelwood for pioneers.

The diverse environmental role played by forests in southern Manitoba was either not fully understood or not considered significant. Changes in water balance, erosion, flooding and loss of wildlife accompanied forest clearing. Open expanses of prairie were rendered vulnerable to unimpeded wind erosion, river systems showed greater seasonal extremes in water regimes, and intermittent water bodies became less reliable as seasonal water supplies. It is only during the decades of the 80's that physical degradation of agro-Manitoba became a public issue. Interest in using the remaining small forested areas increased as awareness of its multi-faceted value increased.

Deterioration of the economic performance of agriculture has accelerated interest in woodlots, not only as potential sources of income, but also as ecological components that provide aesthetic as well as monetary opportunities. Although private forest management is unlikely to spawn major economic activity, it may provide opportunities for rural development that enhance incomes of owners, processers and manufacturers. In combination with aesthetic and ecological spin-offs, the changing societal attitude toward conservation of natural resources may aid development of sustainability in farm and small town ventures. Although some immediate monetary benefits may be derived, woodlot management is, in essence, a long-term strategy to use once scorned resources for the betterment of society. It is toward this goal that management strategies are directed.

This study is based primarily on factual information derived from rural landowners. It is not an exhaustive comparative study, but rather a survey of the attitudes and experiences of landowners regarding private forest resources and their management. To the extent that opinions may be involved in interpretation of the data, they reflect the philosophy and opinions only of the authors.

RCR

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Executive Summary

This study was designed to gather information on the perceptions, attitudes, knowledge, history and interest of private landowners in establishing management programs on their forested acreage, or in reforestation of their lands. Properties were divided into two groups: 1) those with more than 40 acres of potentially valuable forest (quality woodlots) and 2) those with less than 40 acres of forest (small or limited woodlots). Four widely separated municipalities were surveyed: L.G.D. Piney, R.M. Rhineland, R.M. of Turtle Mountain, and R.M. Minitonas. A total of 374 questionnaires were sent to owners of quality woodlots, with 87 usable returns (23%). A total of 743 questionnaires were sent to owners with small woodlots, with 210 returns (30%).

Respondents varied little between categories and among areas in age, marital status, gender of respondents, and ownership status. Owners of quality woodlots were much less likely to be farmers, to live farther away from the woodlot, to own smaller properties, and to have a wide variety of occupations. Retired owners were common, and educational backgrounds varied widely in all groups. Extreme variation in size of properties, and a lack of relationship between property size and quality of forest, may obviate "general management" approaches, and require individual management plans.

Somewhat less than half of all owners have harvested some wood products. Fuelwood was by far the most common product, but sawlogs, posts and rails and Christmas trees were common. About 75% of owners use their own products and 25% sell products. A desire to preserve remaining trees was most often the reason given for not harvesting.

Approximately 60% of owners said they knew how to get tree stock, but only 40% felt they had enough information to manage woodlots effectively. These perceptions varied considerably among areas. One-fourth of respondents stated definite interest in future management and another 36% may be interested. Programs, therefore, may have tc be "sold" to landowners.

Providing shelter, increasing wildlife habitat, soil and water conservation and recreation were major reasons given for wanting to manage woodlots. This suggests that programs should be designed to be multi-faceted and to complement home protection, agriculture, and wildlife production rather than emphasize only forest products. Significantly, 40% of the owners of quality woodlots expressed desire to expand their forest resources.

All management strategies should be flexible to accommodate a variety of interests. Demonstration projects, educational materials, and information seminars may have to be designed for and directed to specific sub-groups. Local projects may serve as examples to change perceptions and attitudes and promote diffusion of management concepts through time. Program options should range from purely aesthetic to commercial, both as single options, and as combinations. For example, programs designed to increase production of wood products should include wildlife and recreation considerations, and vice versa.

Results suggest that information and education are in greatest demand, followed by technical assistance and financial incentives. This suggests a phased-in, cautious approach to forest management. Landowners clearly indicate that the Provincial government, either singly or in combination with the Federal government or private organizations should be responsible for programs.

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INTRODUCTION

Management of forest resources on private lands is well-established in Atlantic and Central Canada. This partly reflects the fact that half of the forests of New Brunswick, three-fourths of those in Nova Scotia, and nearly all woodlots on Prince Edward Island are privately owned. In Newfoundland, Quebec and Ontario, only about 10% of the forested area is privately owned, but most private woodlots are managed. They often have the advantages of being near markets and containing valuable tree species (Reed 1988).

In Western Canada, Crown Land forests account for 97% of all forests. Approximately 7% of the forests in the forest zone of Manitoba occur on private land (Manitoba Natural Resources 1986). These extensive private forests and small woodlots in agro-Manitoba are located near potential markets, and are capable of producing several hardwood tree species. Proximity to urban areas increases the potential of private woodlots for fulfilling non-timber values such as recreation, wildlife habitat and rural residences. Among Western Provinces, Saskatchewan and British Columbia have private woodlot management programs in place. The Saskatchewan program allocates $200,000 per year to private forests. The B.C. program allocates $30 million dollars over five years for a licensing and tax incentive program (Reed 1988).

Although Canada is recognized world-wide for forest products, their is increasing concern about the continued viability of timber supply and forest renewal. As harvest cost-effectiveness decreases with dwindling supply resulting from non-commercial industrial uses, the forest industry is threatened through competition from a variety of sectors. Domestic and foreign demand for lumber, pulpwood, fuelwood and specialty products is increasing, but effective long-term management is lacking in many private forests. Awareness of the related issues of wildlife preservation, soil and water conservation, and recreational and aesthetic values of forested areas is growing in all regions of Canada (CWS Rpt. 1989).

Although Manitoba never will be a major lumber producing Province because of climatically imposed growth limitations of the natural tree species, the Province can enhance management and utilization of its forest resources by including a private land forest management program. Small to medium-scale businesses and industries based on wood from private lands may allow productive diversification for farmers, either through sales or provision of seasonal jobs. A variety of wood products are potentially available to augment the already significant use of wood.

To realize the unique potentials of hardwood and softwood forests on private lands in southern Manitoba required an assessment of the characteristics, attitudes and activities of landowners regarding private woodlot management. The Sustainable Development Land and Water Strategy Workbook on Forests emphasizes the need to investigate commercial potentials for woodlot and shelterbelt management (Manitoba Sustainable Development Coordination Unit, 1990). There has been some concern within the forest management community in Manitoba that Crown Lands alone may not be able to meet the demand for wood products in the near future. Accessibility and distance to markets are major concerns.

All sawmill operators in Manitoba are required to obtain a license and submit cutting records. Regulations, however, are difficult to enforce consistently on private lands, and production probably is considerably higher than suspected. Current recording practices do not allow accounting of forest product volume or value, especially if cutting is done for personal use, or for neighbours.

To ascertain public interest and ensure public input, a preliminary survey was completed in 1988 in a limited area of eastern Manitoba (Figure 1). Landowners (n = 233) were either mailed a survey or interviewed if their properties contained at least 40 acres of mature forest (Hreno, unpublished)[1]. This study allowed assessment of the questionnaire and established the fact that there was significant public interest in establishing a private woodlot management program in Manitoba. The preliminary study allowed refinement of techniques for this study.

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1 40 acres = 16.2 hectares: imperial units are used in this report.

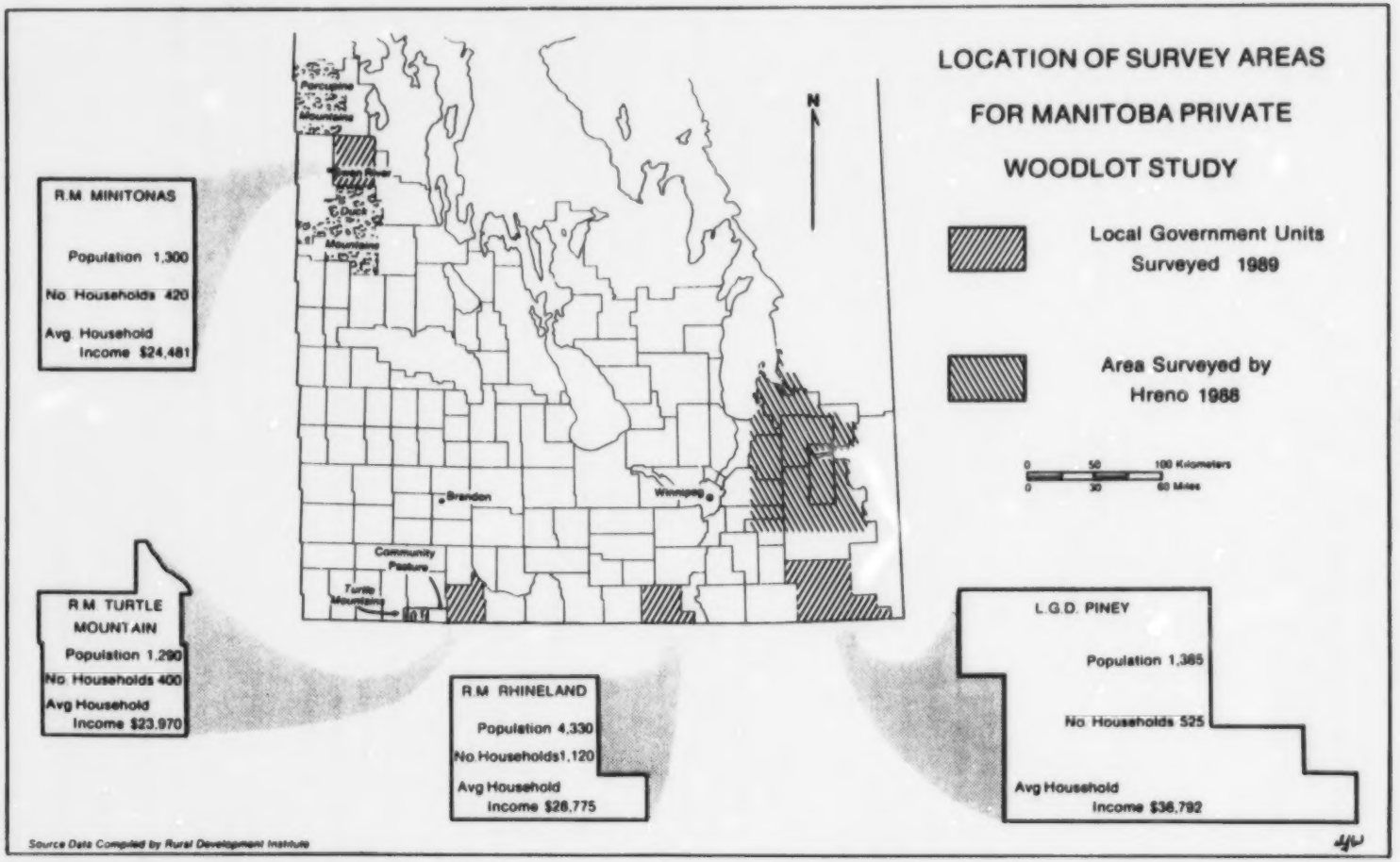

LOCATION OF SURVEY AREAS
FOR MANITOBA PRIVATE
WOODLOT STUDY
Local Government Units
Surveyed 1989
Area Surveyed by
Hreno 1988
N
0 50 100 Kilometers
0 30 60 Miles
R.M. MINITONAS
Population 1,300
No. Households 420
Avg. Household
Income $24,481
R.M. TURTLE
MOUNTAIN
Population 1,290
No. Households 400
Avg Household
Income $23,970
R.M. RHINELAND
Population 4,330
No. Households1,120
Avg Household
Income $28,775
L.G.D. PINEY
Population 1,385
No. Households 525
Avg Household
Income $36,792
Porcupine
Mountains
Duck
Mountains
Brandon
Winnipeg
Community
Pasture
Turtle
Mountains
Source Data Compiled by Rural Development Institute

Figure 1

METHODS

For the purposes of this study, a potentially productive woodlot was defined as a forested area of 40 acres or more that contained mature trees of cutting class 4 or better quality. Cutting class 4 is defined as mature stands which may be cut as they have reached rotation age (+\-) 10 years on preferred sites (Site 1) or (+\-) 20 years on poorer quality sites (Site 2). Lands with both of these characteristics are called **quality woodlots**. Woodlots of less than 40 acres, and those with trees of less than cutting class 4 quality, are termed **small** or **limited woodlots**.

Use of the woodlot definitions (bolded above) reflects a decision to subdivide landowners into two categories for a more extensive survey. It was deemed important not only to survey owners who might benefit immediately from quality woodlots, but also to ascertain potential interest among landowners for establishing or managing small or limited woodlots in the future. Accordingly, two survey forms were devised, with that sent to owners of quality woodlots being somewhat longer and more specific (Appendix A) than that sent to owners of small woodlots (Appendix B). Many questions were identical on the surveys. It was decided to use a mailed survey to reach a greater number of landowners at a lower cost (Rasen and Kaiser 1988).

Four widely separated areas were selected for survey to allow delineation of potential variations in attitude among landowners from different regions (Figure 1). The Local Government District of Piney (hereinafter Piney) was selected because it has a history of wood production, is proximal to a commercial pulp mill, is adjacent to the study area of the preliminary survey, and has a great number of absentee landowners. The Rural Municipality of Rhineland (hereinafter Rhineland) was selected because it is extensively farmed and contains no existing quality woodlots.

The Rural Municipality of Turtle Mountain (hereinafter Turtle Mountain) was selected because although it has limited wood production, it is located adjacent to Turtle Mountain Provincial Park and a Crown Land (P.F.R.A.) pasture, both of which are heavily forested (Figure 1). Turtle Mountain also has an active Conservation District Authority that could play a vital role in future initiatives.

The Rural Municipality of Minitonas (hereinafter Minitonas) was selected because it lies between two major forested regions (Duck Mountains and Porcupine Mountains) (Figure 1). It also contains forested Crown Lands and extensively wooded private properties. Minitonas lies near the Town of Swan River, where a potential wood products industry may be located.

Names and mailing addresses were obtained from tax rolls for the four survey areas. The Geographic Information System of the Manitoba Forestry Branch was used to separate landowners with quality woodlots from those with small woodlots. Survey questionnaires were mailed out with a postage paid return envelope and covering letter (Appendix C) during September 1989. No personal contact or follow-up mailings were attempted, and returns were accepted until 31 January 1990. Response was encouraged, however, by entering the names of all respondents in a draw for free books.

SURVEY RETURNS

As a result of property identifications, 374 questionnaires were mailed to landowners with more than 40 acres of mature forest of cutting class 4 or better (long form, Appendix A). Since no properties met those criteria in Rhineland, questionnaires were sent only to Piney, Turtle Mountain and Minitonas. Eighty-seven usable returns were received (23%).

Properties with small woodlots were identified in all four areas. A total of 743 questionnaires were mailed to landowners with less than 40 acres of quality forest (short form, Appendix B). Two-hundred and ten usable surveys were returned (30%).

RESULTS

PROPERTIES WITH LIMITED FOREST RESOURCES

Characteristics of Respondents with Limited Forest Resources

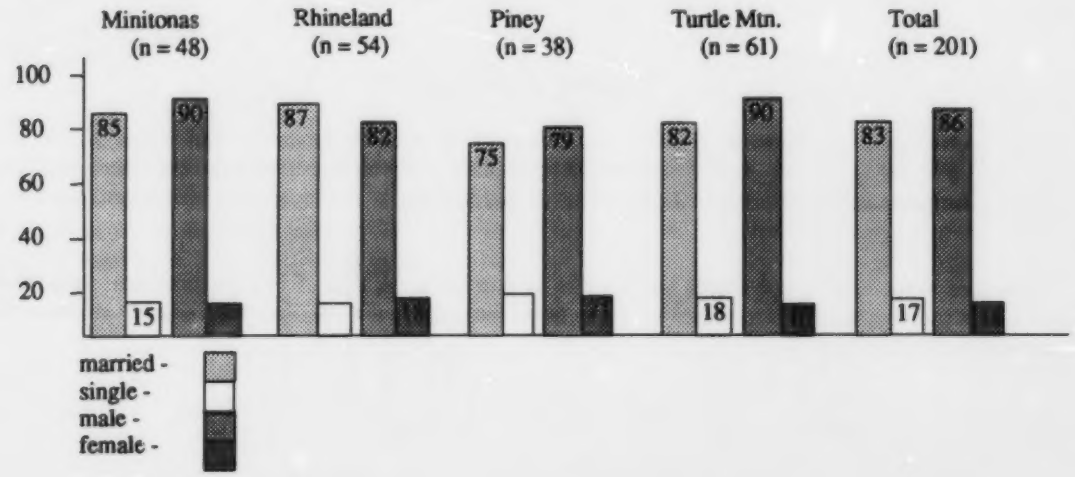
Most of the 210 total respondents from properties with less than 40 acres of forest of cutting class 4 or better were 40 years old or older (Table 1). Of the 205 who responded to the age question, 95% were more than 30 years of age, and nearly half were more than 50 years of age. This pattern was consistent among areas, but somewhat fewer young people and proportionately higher numbers of respondents over 60 years of age were evident in Piney. Although averages cannot be computed from categorial data, it appears that the average age of respondents would be between 45 and 50 years.

Table 1 Age characteristics of respondents with small woodlots

	Minitonas		Rhineland		Piney		Turtle Mtn.		Total	
Age category	n	%	n	%	n	%	n	%	n	%
< 20 yrs.	0	0	0	0	0	0	0	0	0	0
21 - 30	2	4	2	4	3	8	4	6	11	5
31 - 40	17	35	15	28	4	10	14	23	50	24
41 - 50	9	18	14	26	11	28	16	26	50	24
51 - 60	10	20	11	20	9	23	19	31	49	24
> 61	12	24	12	22	12	31	9	15	45	23
Totals	**50**	**100**	**54**	**100**	**39**	**100**	**62**	**100**	**205**	**100**

Eight-six percent of the respondents were male, and 83% were married (Figure 2). These patterns varied only between 5 and 10% among areas. The generally older respondents in Piney (Table 1) were more frequently single and widowed than respondents in other areas, and more women answered the questionnaire in Piney.

Figure 2 Marital status and gender of respondents with small woodlots



Nearly all respondents reported that they, or they and their spouse owned the land (Table 2). Only 7% of the properties were in partnerships, undivided estates, or otherwise owned. The ownership pattern was consistent among municipalities.

Table 2 Ownership status of lands with small woodlots

Ownership type	Minitonas n	Minitonas %	Rhineland n	Rhineland %	Piney n	Piney %	Turtle Mtn. n	Turtle Mtn. %	Total n	Total %
Respondent only	21	43	21	38	15	38	22	35	79	38
Respondent and spouse	26	53	30	56	18	46	38	60	112	55
Partnership	1	2	2	4	3	8	3	5	9	4
Undivided estate	0	0	0	0	2	5	0	0	2	1
Other	1	2	1	2	1	3	0	0	3	2
Total	**49**	**100**	**54**	**100**	**39**	**100**	**63**	**100**	**205**	**100**

A majority of the respondents were farmers (58%), but 30% listed other primary occupations, and 12% were retired (Table 3). Farming was more dominant as the primary occupation in Rhineland and Turtle Mountain, but accounted for only half of the respondents in Minitonas and one-quarter in Piney. Diversity in primary occupations occurred in all areas but was most noticeable in Minitonas and Piney. The distribution of primary occupations other than farming was reasonably even when all areas were combined.

Table 3 Primary occupations of owners of small woodlots

Occupation	Minitonas n	Minitonas %	Rhineland n	Rhineland %	Piney n	Piney %	Turtle Mtn. n	Turtle Mtn. %	Total n	Total %
Farming	25	50	41	75	9	23	45	69	120	58
Retired	4	8	6	10	8	21	7	12	25	12
Labourer	4	8	1	1	6	15	2	3	13	6
Own business	5	10	1	1	4	10	1	2	11	5
Homemaker	3	6	5	9	1	3	1	2	10	5
Skilled trade	3	6	2	3	1	3	3	4	9	4
Professional	2	4	0	0	4	10	2	3	8	4
Clerical	2	4	0	0	1	3	1	2	4	2
Office manager	2	4	1	1	0	0	2	3	5	2
Woodsworker	0	0	0	0	0	0	0	0	0	0
Other	0	0	0	0	5	12	0	0	5	2
Total	**50**	**100**	**57**	**100**	**39**	**100**	**64**	**100**	**210**	**100**

The educational backgrounds of landowners varied from less than high school graduation to university degrees (Table 4). Those with and without high school diplomas each consistently accounted for between 30 and 40% of the landowners, while college and university graduates varied between 10 and 20% of the respondents among areas. The only notable deviation from this pattern occurs in Rhineland where fewer landowners had university training.

Table 4 Educational background of respondents who owned limited woodlots

Highest level completed	Minitonas		Rhineland		Piney		Turtle Mtn.		Total	
	n	%	n	%	n	%	n	%	n	%
< High school	19	40	21	40	12	32	19	31	71	36
High school	18	37	20	38	16	41	25	41	79	39
College/technical diploma	5	10	10	19	4	11	11	18	30	15
University degree	6	13	2	3	6	16	6	10	20	10
Totals	**48**	**100**	**53**	**100**	**38**	**100**	**61**	**100**	**200**	**100**

Characteristics of Properties with Limited Forest Resources

A total of 210 landowners responded to the questionnaire mailed to owners of less than 40 acres of woodlot with trees of cutting class 4 or better in the four surveyed municipalities (Table 5). The number of respondents was reasonably balanced among areas. Average property size was consistently between 350 and 400 acres in three of the municipalities, but was noticeably greater in the Turtle Mountain region. The overall average of 443 acres is representative. In all areas the properties varied greatly in size as indicated by the large standard deviations and ranges (Table 5). Nearly two-thirds of the respondents owned properties of <320 acres in the R.M.s of Minitonas, Rhineland and Piney. Although large properties occurred in all areas, a significant number occurred only in the R.M. of Turtle Mountain.

Most properties in all areas contained <100 acres of forest or scrub (Table 6). Among the 209 respondents, the average wooded land was only 62 acres. There were, however, distinct variations in the amount of wooded land among the areas. For example, landowners reported an average of <4 acres of woodlot in the R.M. of Rhineland. Most of this would occur as shelter belts or windbreaks near buildings. In contrast, landowners in Piney averaged 134 acres of woodland. Since the average sizes of properties were similar among Minitonas, Rhineland and Piney (Table 5), the difference in forested acreage reflects important environmental conditions and historical land use patterns. The larger properties in Turtle Mountain were moderately forested (Table 6).

Table 5 **Characteristics of properties with less than 40 acres of forest of cutting class 4 or better**

Acres owned	Minitonas n	%	Rhineland n	%	Piney n	%	Turtle Mtn. n	%	Total n	%
< 320	33	66	34	60	28	68	27	43	122	58
321 - 640	11	22	15	26	7	18	17	27	50	24
641 - 1280	3	6	7	12	3	7	13	21	26	12
1281 - 1860	1	3	0	0	0	0	5	8	6	3
> 1860	1	3	1	2	3	7	1	1	6	3
Total	49	100	57	100	41	100	63	100	210	100
$\bar{x}$ acres	367.6		398.1		391.2		577.6		443.5	
SD +	357.7		592.5		633.7		518.4		523.6	
Range	10 - 1920		13 - 4440		2 - 3300		27 - 3000		2 - 4400	

Table 6 **Acres in tree or scrub cover on properties with less than 40 acres of cutting class 4 or better**

Acres forest/scrub	Minitonas n	%	Rhineland n	%	Piney n	%	Turtle Mtn. n	%	Total n	%
0 - 20	23	47	54	96	8	20	27	42	112	54
21 - 40	12	25	0	0	8	20	4	6	24	12
41 - 80	10	20	2	4	7	17	11	18	30	14
81 - 120	2	4	0	0	5	12	9	14	16	8
121 - 160	0	0	0	0	2	5	3	5	5	2
161 - 200	0	0	0	0	3	7	2	3	5	2
201 - 300	0	0	0	0	5	12	5	8	10	5
301 - 400	1	2	0	0	1	2	1	2	3	1
> 401	1	2	0	0	2	5	1	2	4	2
Total	49	100	56	100	41	100	63	100	209	100
$\bar{x}$ acres	45.8		3.9		134.0		78.2		61.6	
SD +	85.2		9.3		192.3		104.1		91.6	
Range	0 - 500		0 - 50		0 - 1000		0 - 580		0 - 1000	

Two-thirds of the landowners with less than 40 acres of cutting class 4 forest lived on the quarter section or within one mile of the woodlot (Table 7). Only 6% lived between 51 - 100 miles, and 7% more than 100 miles from the property. Most of these would be non-farmers from urban areas, farmers with summer pastures away from the home property, or individuals within either group who inherited land. The pattern of residence relative to forested areas was consistent among areas except for Piney, where 33% of the owners lived more than 50 miles from the property.

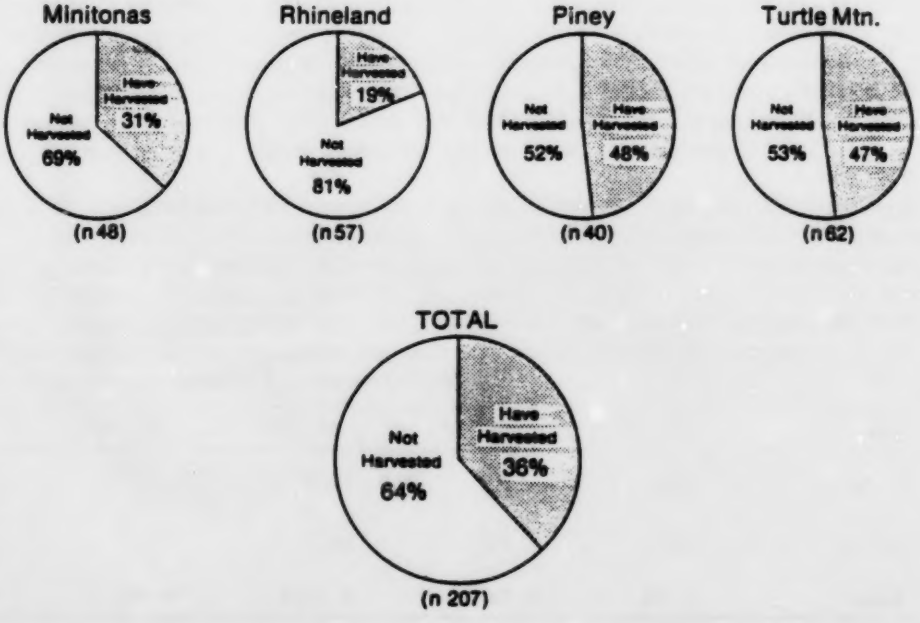
Table 7 Distance of residence in relation to surveyed land for properties of less than 40 acres of cutting class 4 or better

Distance	Minitonas		Rhineland		Piney		Turtle Mtn.		Total	
	n	%	n	%	n	%	n	%	n	%
< 1 mile	31	62	38	73	20	49	43	72	132	65
1 - 50 miles	14	28	12	23	7	18	12	20	45	22
51 - 100 miles	0	0	2	4	8	20	1	2	11	6
> 100 miles	5	10	0	0	5	13	4	6	14	7
Totals	**50**	**100**	**52**	**100**	**40**	**100**	**60**	**100**	**202**	**100**

Harvest Histories on Properties with Limited Forest Resources

Only one-third of the landowners with small forest holdings have harvested wood products during the last five years (Figure 3). The lowest percentage (19%) was reported in Rhineland, while approximately half of the respondents in Piney and Turtle Mountain had harvested some products.

FIGURE 3 Harvesters of wood products among landowners with small forested lands.



The most commonly harvested product was fuel wood which was taken by 71 of the 74 respondents (Table 8). Saw logs and posts and rails were cut in all areas except Rhineland, and were reported by 20% of the owners who had harvested wood products. Christmas trees were reported as products in Minitonas and Piney, and pulpwood was taken in Piney.

Table 8 Products harvested by owners of limited wood lots [1]

Product	Minitonas		Rhineland		Piney		Turtle Mtn.		Total	
	n	% R/T[2]	n	% R/T	n	% R/T	n	% R/T	n	% R/T
Pulp wood	0	0/0	0	0/0	6	32/15	0	0/0	6	8/3
Sawlogs	3	20/6	0	0/0	7	37/17	4	14/6	14	19/7
Fuel wood	15	100/30	11	100/19	16	84/39	29	100/46	71	96/36
Posts/rails	4	27/8	0	0/0	2	11/5	9	31/14	15	20/8
Christmas trees	1	7/2	0	0/0	6	32/15	0	0/0	7	10/4
Number respondents		15/50		11/55		19/41		29/52		74/198

[1] Multiple answers are possible from each landowner.
[2] % R/T represents the percentage of landowners related to the number of respondents (R) to the question, and the percentage of landowners related to the total number of possible respondents (T).

One hundred and twenty-nine of the 210 possible respondents answered a question asking for reasons why they have not harvested wood products from their lands (Table 9). Multiple responses were allowed and the data were analyzed both by number of respondents and by total possible respondents to gain a perspective on current attitudes related to harvest.

The two most important reasons why landowners in all areas combined do not currently harvest wood products relate to an overall lack of trees and the desire to preserve what they have. The only secondary reasons of importance were that the trees were too small, and they lacked time to become involved in harvest of wood products.

Within regions, small trees posed a problem in Minitonas, while the overall lack of trees dominated the Rhineland data. Although the overall lack of wood was not as significant in Piney as in other areas, the desire to save trees was strongest in this municipality. An overall lack of wood was reported by the greatest number of respondents in Turtle Mountain.

Table 9 **Reasons given for not harvesting wood products by owner's of small woodlots** [1]

Reason [1]	Minitonas		Rhineland		Piney		Turtle Mtn.		Total	
	n	% R/T [2]	n	% R/T	n	% R/T	n	% R/T	n	% R/T
Not enough time	3	9/6	3	7/5	5	24/12	4	14/7	15	12/7
Do not know market	1	3/2	3	6/5	0	0/0	3	10/5	7	6/4
Lack labor	3	9/6	0	0/0	2	10/5	3	10/5	8	6/4
Not enough wood	17	52/34	24	52/42	6	29/15	18	62/29	65	50/31
Trees too small	10	30/20	5	11/9	4	20/10	6	21/10	25	19/12
Want to preserve woodlot	19	58/38	17	37/30	13	62/32	16	55/26	65	50/31
Other	1	3/2	2	4/3	3	14/7	1	3/2	7	5/3
No. respondents/ total poss. no.		**33/50**		**46/57**		**21/41**		**29/62**		**129/210**

[1] Multiple answers are possible from each landowner.
[2] % R/T represents the percentage of landowners related to the number of respondents (R) to the question, and the percentage of landowners related to the total possible respondents (T).

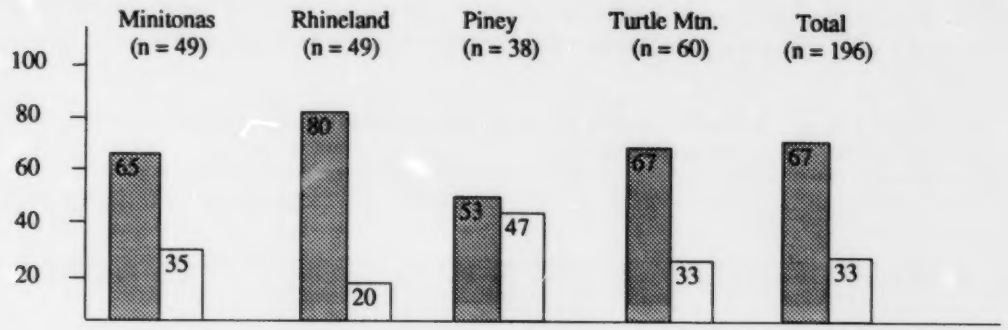
Awareness of Forestry Among Owners of Limited Forest Resources

Three questions were asked regarding awareness of information and assistance in forestry practices. Two-thirds of the owners of small woodlots stated that they were aware of where to obtain nursery stock for planting (Figure 4A). The percentage stating they knew this information, however, varied from a high of 80% in Rhineland to only 53% in Piney.

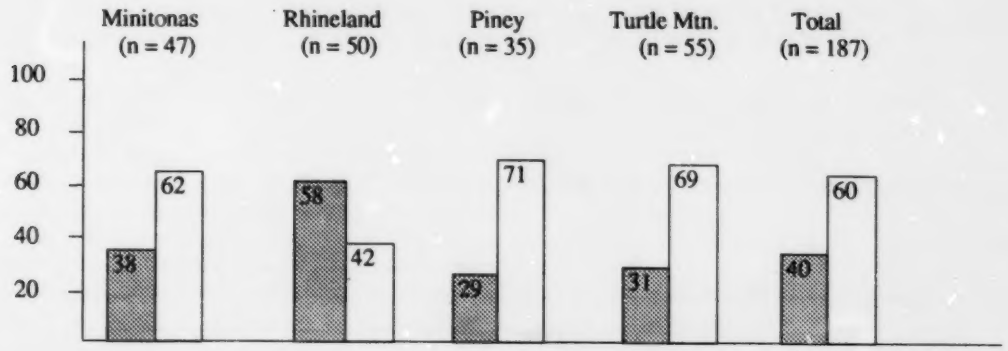
When asked if enough information was available on woodlot management, however, only 43% of the 183 respondents said yes (Figure 4B). The number of positive responses varied from lows of 29% and 33% in Piney and Turtle Mountain respectively, to a high of 64% in Rhineland. Overall, therefore, 57% of all landowners and more than two-thirds of the respondents in Piney and Turtle Mountain suggested that they could use more information. Similar results occurred in response to a question regarding knowledge of where to obtain information concerning woodlot management (Figure 4C).

Figure 4 **Knowledge of available tree stock, perceptions concerning amount of information available, and knowledge of how to access information expressed by owners of small woodlots**

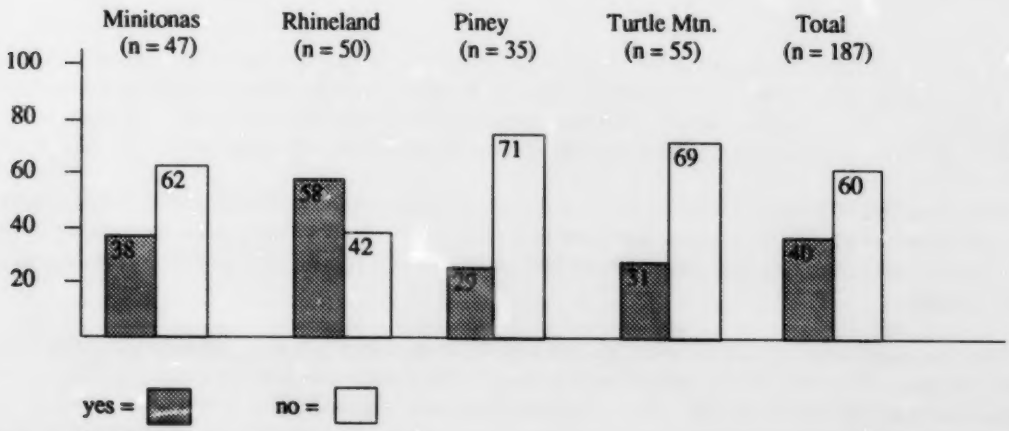
A. Know of available tree stock



B. Perceptions of amount information available (yes = enough information is available)



C. Expressed knowledge of how to access available information (yes = know how to access)



Property owners were allowed to select more than one reason in response to a question regarding their reasons for establishing or managing tree cover (Table 10). The desire to have shelter near buildings was the most commonly reported reason across all areas, with 75% of owners responding. Provision of wildlife habitat and the need for soil and water conservation were major secondary reasons listed by more then half of the landowners. Replacing trees and improved recreational potentials were frequently mentioned. The desire to directly improve forest resources, however, was listed only by 16% of the owners. Most owners, therefore, currently manage tree cover for reasons other than the forest resource itself. Only 13% of the owners expressed no interest in woodlot management.

Table 10 Reasons for establishing or managing tree cover listed by landowners with less than 40 acres of cutting class 4 or better stock (multiple answers possible)

Reasons	Minitonas		Rhineland		Piney		Turtle Mtn.		Total	
	n	%[1]	n	%	n	%	n	%	n	%
Shelter	36	75	42	79	23	56	54	86	155	75
Wildlife habitat	29	59	22	42	29	71	41	65	121	59
Soil-water conservation	24	49	29	55	19	46	42	67	114	55
Replacing trees	14	29	13	25	16	39	16	25	59	29
Recreational use	17	34	10	19	18	44	14	22	59	29
Expand forest resource	6	12	3	6	17	42	6	10	32	16
Other	1	2	3	6	3	7	4	6	11	5
Not interested	8	16	9	17	6	15	5	8	28	13
Total n possible	**49**		**53**		**41**		**63**		**206**	

[1] Percentages based on total number respondents.

Patterns of responses among areas varied somewhat but were reasonably consistent for Minitonas, Rhineland and Turtle Mountain. In Piney, however, wildlife habitat was the major reason for managing tree cover, and expanding the forest resource and recreational benefits from woodlands were more frequently mentioned. In contrast, the need for shelter was less important, although more than half of the respondents listed this reason.

Only about half of the landowners who returned survey forms answered a question regarding potential future interest in woodlot management. This suggests that many landowners have not considered, or are not aware of the potentials. Of those who answered, 26% were interested and 38% were not (Table 11). An additional 36% were uncertain of future management.

There are significant regional variations in responses regarding future interest. The most noticeable pattern is the lack of response from the R.M. of Turtle Mountain (only 3 of 64 owners answered the question). The highest number of positive responses is evident in Rhineland. If the positive responses and those indicating uncertainty are combined, more than half of the landowners in Minitonas, Rhineland and Piney could respond to a management program.

Table 11 Potential future interest in woodlot management expressed by landowners with limited forested land areas

Interest in 5 yrs.	Minitonas		Rhineland		Piney		Turtle Mtn.		Total	
	n	%	n	%	n	%	n	%	n	%
Yes	4	16	14	33	7	27	0	0	25	26
No	11	42	15	34	9	35	2	67	37	38
Uncertain	11	42	14	33	10	38	1	33	36	36
Total	**26**	**100**	**43**	**100**	**26**	**100**	**3**	**100**	**98**	**100**

PROPERTIES WITH MORE THAN 40 ACRES OF CUTTING CLASS 4 OR BETTER WOODLANDS (HIGH QUALITY WOODLOTS)

Characteristics of Respondents with High Quality Woodlots

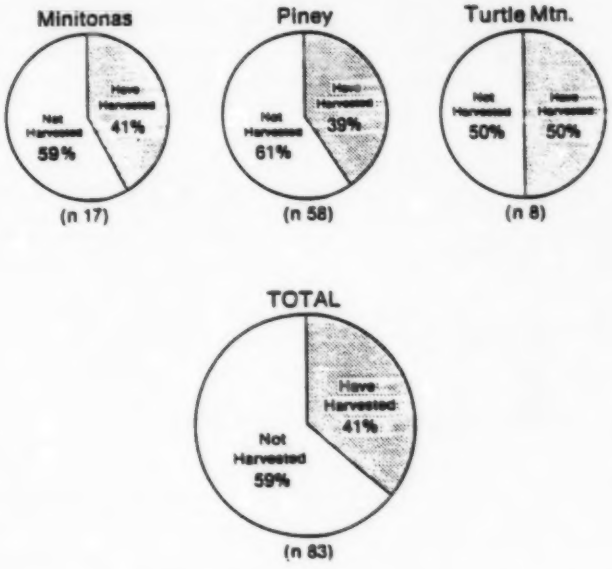
Forest inventory analysis identified properties that had more than 40 acres of forested land with trees of cutting class 4 or better quality. Such areas existed in Minitonas, Piney and Turtle Mountain, but no large high-quality woodlots were identified in Rhineland. Data, therefore, are reported for three of the four survey areas.

Eighty-three landowners responded to the survey (Table 12). Age categories of respondents reflected even distribution between 30 and >60 years, with few respondents being less than 30 years of age. Respondents in Minitonas were younger and those in Piney somewhat older than values reflected by combined data. The small sample from Turtle Mountain is difficult to generalize. Most landowners were married and most respondents were male (Figure 5). These patterns were consistent among all areas.

Table 12 Age characteristics of respondents with high quality woodlots

Age category	Minitonas		Piney		Turtle Mtn.		Total	
	n	%	n	%	n	%	n	%
< 20 years	0	0	0	0	0	0	0	0
21 - 30 years	2	12	2	3	1	12	5	6
31 - 40 years	5	31	14	24	1	12	20	24
41 - 50 years	5	31	9	16	2	25	16	19
51 - 60 years	1	6	16	28	3	38	20	24
> 60 years	4	25	17	29	1	12	22	27
Totals	**17**	**100**	**58**	**100**	**8**	**100**	**83**	**100**

FIGURE 5 Percentage of landowners with more than 40 acres of quality forest who have harvested wood products during the last five years.



Only half of the owners lived on or within one mile of the forested area of their property (Table 13). Nearly 40% lived more than 50 miles away. There are noticeable differences among areas, as fewer owners lived on the property in Piney than in Minitonas. In fact, nearly half of the respondents in Piney lived more than 50 miles away.

Table 13 Distance of residence from forested land on properties with high quality woodlots

	Minitonas		Piney		Turtle Mtn.		Total	
Distance	n	%	n	%	n	%	n	%
< 1 mile (on property)	11	69	25	44	4	50	40	50
1 - 50 miles	2	13	5	9	2	25	9	11
51 - 100 miles	1	6	21	37	1	12	23	28
> 100 miles	2	13	6	10	1	12	9	11
Totals	**16**	**100**	**57**	**100**	**8**	**100**	**81**	**100**

Farming was the primary occupation of landowners in Minitonas and Turtle Mountain, but not in Piney (Table 14). The overall total of only one-third of the respondents being farmers is skewed by the high number of returns from Piney. Retired owners constituted the second most frequent category both overall and in each area. The variety of occupations listed was greater in Piney than in other survey areas.

Table 14 Primary occupations of owners of quality woodlots

	Minitonas		Piney		Turtle Mtn.		Total	
Occupation	n	%	n	%	n	%	n	%
Farming	10	62	13	22	4	50	27	33
Woodsworker	0	0	4	7	0	0	4	5
Labourer	1	6	9	16	0	0	10	12
Clerical	0	0	1	2	0	0	1	1
Skilled trade	1	6	2	3	1	13	4	5
Own business	0	0	5	9	0	0	5	6
Office manager	0	0	2	3	1	13	3	4
Professional	1	6	9	16	1	13	11	13
Homemaker	0	0	0	0	0	0	0	0
Retired	3	20	12	21	1	13	16	20
Other	0	0	1	2	0	0	1	1
Total	**16**	**100**	**58**	**100**	**8**	**100**	**82**	**100**

All levels of educational background were evident in respondents from all areas (Table 15). More than half of the respondents from Minitonas had college or university training, but only one-quarter of those in Piney had post-secondary training.

Table 15 Educational background of respondents who owned high quality woodlots

	Minitonas		Piney		Turtle Mtn.		Total	
Highest level completed	n	%	n	%	n	%	n	%
< High school	4	26	22	41	3	37	29	37
High school	3	18	18	33	1	12	22	28
College/technical diploma	6	38	6	11	2	25	14	18
University degree	3	18	8	15	2	25	13	17
Totals	**16**	**100**	**54**	**100**	**8**	**100**	**78**	**100**

Most properties were owned by the respondent only (36%) or the respondent and spouse (56%) (Table 22). Partnerships were more numerous in Piney. Ownership, therefore, reflects family groups rather than corporate arrangements.

Table 16 Ownership status of lands with high quality woodlots

	Minitonas		Piney		Turtle Mtn.		Total	
Ownership type	n	%	n	%	n	%	n	%
Respondent only	8	50	19	33	2	25	29	36
Respondent and spouse	8	50	32	56	5	62	45	56
Partnership	0	0	5	9	1	13	6	7
Undivided estate	0	0	1	2	0	0	1	1
Totals	**16**	**100**	**57**	**100**	**8**	**100**	**81**	**100**

Characteristics of Properties with High Quality Forest Resources

Properties of the respondents who owned high-quality woodlots varied greatly in size (Table 17). The average size of the 82 properties was 357 acres, but the standard deviation and range suggest great variability. Among areas, properties in Piney were smallest and those in Turtle Mountain were largest. In fact, average properties in Turtle Mountain were nearly four times the acreage of those in Piney. Even within areas, standard deviations and ranges indicate a wide range in size of holdings. Overall, however, almost three-fourths of properties contained less than 320 acres, and only 10% were larger than one square mile.

Table 17 Characteristics of properties with more than 40 acres of forest of cutting class 4 or better

	Minitonas		Piney		Turtle Mtns.		Total	
Acres owned	n	%	n	%	n	%	n	%
< 320	10	59	47	83	2	25	59	72
321 - 640	3	18	8	14	3	37	14	17
641 - 1280	3	18	2	3	2	25	7	9
1281 - 1860	1	5	0	0	0	0	1	1
> 1860	0	0	0	0	1	13	1	1
Total	17	100	57	100	8	100	82	100
$\bar{x}$ acres	483.0		240.3		920.5		356.9	
SD +	362.8		205.6		905.4		306.5	
Range	**80 - 1500**		**40 - 1000**		**320 - 3000**		**40 - 3000**	

Seventy-eight landowners reported an average of 130 acres of forest or scrub cover on their properties (Table 18). The smallest forest cover areas occurred in Minitonas and the largest in Turtle Mountain. Standard deviations suggest moderate variability among properties. Two-thirds of the landowners reported less than 120 acres of forested land, and only 6% had more than 200 wooded acres. The greatest range in woodlot size occurred in Piney.

Table 18 Acres in trees or scrub cover on properties with more than 40 acres of cutting class 4 or better

	Minitonas		Piney		Turtle Mtns.		Total	
Acres forest/scrub	n	%	n	%	n	%	n	%
0 - 40	0	0	6	11	0	0	6	8
41 - 80	6	37	15	27	0	0	21	27
81 - 120	7	44	16	29	2	29	25	32
121 - 160	3	19	9	16	2	29	14	18
161 - 200	0	0	4	7	2	29	6	8
201 - 300	0	0	1	2	1	13	2	2
301 - 400	0	0	2	4	0	0	2	2
> 401	0	0	2	4	0	0	2	2
Total	16	100	55	100	7	100	78	100
$\bar{x}$ acres	90.9		136.8		162.1		129.7	
SD +	38.9		127.7		46.7		102.2	
Range	40 - 160		25 - 804		100 - 225		25 - 804	

Landowners were asked not only to list but also to priorize the reasons for owning forested land (Table 19). Based on frequency of response, providing wildlife habitat was the primary reason for owning forested land. Other major reasons listed include provision of fuelwood, maintenance of heritage, and protection and beautification of personal residences. Residences probably are most important because they were both frequently mentioned and highly rated. Shelter also probably relates to residences.

If one considers wildlife habitat as providing either or both aesthetic and consumptive activities, then hunting, recreational use and aesthetics all would be related factors. Although it may be difficult to analyze these categories, either separately or combined they constitute a bulk of the responses (>100 responses). Other than fuelwood, forest products were important only in Piney, where the greatest diversity of reasons was given (Table 19).

Table 19 **Reasons for owning forested land listed by owners with more than 40 acres of quality woodland**

	Response scale[1]																							
	1			2			3			4			5			6			7			Total	Rating
Reason	M	P	T[2]	M	P	T	M	P	T	M	P	T	M	P	T	M	P	T	M	P	T	(n)	($\bar{x}$)
Wildlife habitat	1	6	1	3	9	2	3	14			6		1	1		1						48	2.7
Personal fuelwood		5	1	4			1	5	2	2	8		1	5			1	1				36	3.3
Heritage		3	1	2	5		1	5		2	5	1		5			2			1		33	3.4
Personal residence	8	21	1									1										31	1.1
Shelter	2	1	1	3	9	1	1	2	1	3				1								25	2.4
Hunting					7		2	5	1		2	1	1	1	1						1	22	3.3
Recreation use	1	4			2	1	2	1			2	2		3		1	1		1	1		22	3.5
Investment		4		2	3	1				1	2		1	1			2		1			18	3.2
Forest products		3			3			3			1		1	5					2			18	3.7
Aesthetics	1	3	1	1	3	1	1	2	1					1	1					1		17	2.6
Land inherited	2	5			2			2														11	1.5
Seasonal residence					3		1	1			2			1			1				1	10	3.8
Tax incentives					2					1						1				2		6	4.7
Other	2	8	1			1																12	1.1

[1] A response of 1 is highest rating. Multiple responses possible.
[2] M = R.M. of Minitonas, P = L.G.D. Piney, T = R.M. of Turtle Mtn.

Awareness of Forestry Among Owners with High Quality Forest Resources

Most landowners with more than 40 acres of potentially valuable forested land felt that they were familiar with the extent of forested land and the species composition of the woodlots on their properties (Table 20). All landowners in Minitonas and Turtle Mountain, and more than 90% in Piney either strongly or moderately agreed with questions posed. There are no differences among areas regarding landowners' perceptions on these two items. However, landowners were less sure of the age and condition of their forests, and wider variation was evident among areas.

Table 20 **Landowners awareness of the extent, species composition and condition of woodlots on properties with more than 40 acres of quality forested land**

	Response scale[1]																	
	1			2			3			4			5			$\bar{x}$		$\bar{x}$
Parameter	M	P	T[2]	M	P	T	M	P	T	M	P	T	M	P	T	M	P	T	total
Aware extent forested land on property	14	42	4	2	10	4		3								1.4/1.3/1.5			1.3
Aware tree species on property	9	41	6	5	9	2	1	5					1			1.3/1.4/1.3			1.4
Aware of age and condition of forest	7	26	5	5	17	2	4	8	1	1	2		1			2.2/1.8/1.5			1.8

[1] Scale: 1 = strongly agree, 2 = moderately agree, 3 = neutral, 4 = moderately disagree, 5 = strongly disagree.
[2] M = R.M. of Minitonas, P = LGD Piney, T = R.M. of Turtle Mountain.

A second more specific question was asked regarding knowledge of the health of trees in woodlots (Table 21). Only 64 landowners answered the question, but most of these felt that they were aware of the health of their trees. In total only 22% were either uncertain or responded negatively. Variations in responses among areas is not deemed significant.

Table 21 **Assessment of the health of trees in woodlots occurring on properties with more than 40 acres of quality forested land**

	Yes		No		Uncertain	
Region	n	%	n	%	n	%
Minitonas	15	88	0	0	2	12
Piney	43	75	6	10	8	15
Turtle Mountains	6	75	1	12	1	12
Totals	**64**	**78**	**7**	**9**	**11**	**13**

Expressions of interest in learning more about private woodlot management varied among areas (Table 22). The lowest positive response was 57% in Turtle Mountain, while the highest was 79% in Piney. Overall about 75% of landowners expressed interest in obtaining more information.

Table 22 Interest in learning more about private land forestry expressed by owners with more than 40 acres of quality forested land

	Yes		No	
Region	n	%	n	%
Minitonas	11	65	6	35
Piney	43	79	11	21
Turtle Mountains	4	57	3	43
Total	**58**	**74**	**20**	**26**

Because of the greater opportunity afforded landowners by the presence of potentially more harvestable forest products, they were asked to indicate awareness of markets for various products (Table 23). Among regions greatest awareness was indicated for fuelwood (71%), and about half of the owners also were aware of marketing potentials for pulpwood, post and rails, sawlogs, and Christmas trees. Awareness of all markets was considerably higher in Piney then in other regions. Awareness of markets for posts and rails was high in Turtle Mountain, suggesting either a local industry or historical sales.

Table 23 Awareness of marketing opportunities for forest products among landowners with more than 40 acres of woodlot of cutting class 4 or better

	Minitonas		Piney		Turtle Mtns.		Total	
Product	n	%	n	%	n	%	n	%
Pulpwood	6	35	39	69	1	14	46	58
Sawlogs	8	47	32	57	1	14	41	51
Fuelwood	13	76	38	67	6	86	57	71
Posts/rails	6	35	33	59	5	71	44	55
Christmas trees	4	23	34	60	3	43	41	51
Other	2	11	1	2	0	0	3	4
Possible n	**17**		**56**		**7**		**80**	

Only 8 of 78 landowners believed that enough information was currently available on private forestry opportunities (Table 24). Although most (51%) were uncertain whether or not they had enough information, 39% responded negatively. The pattern of response was similar among areas.

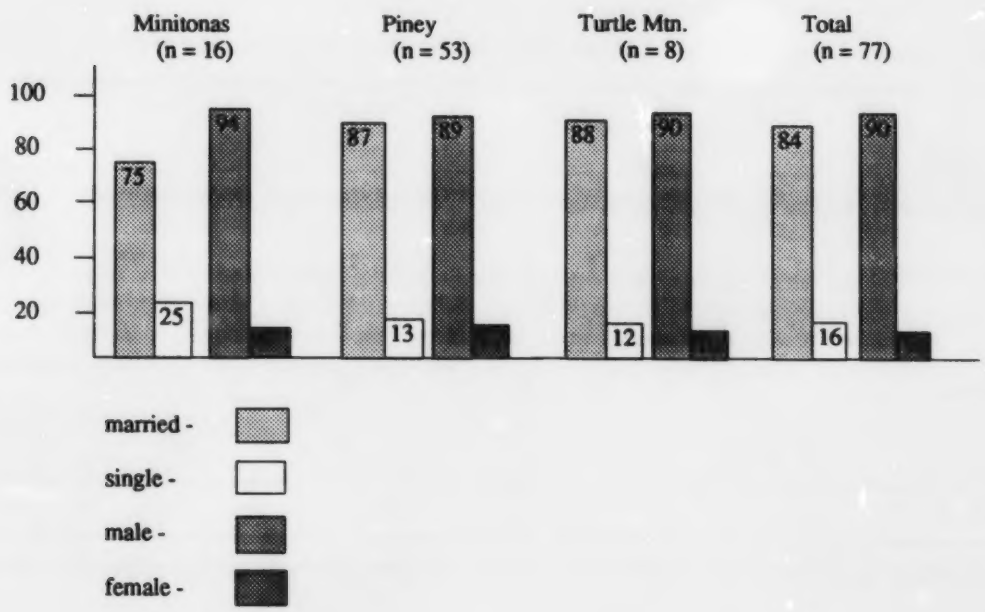
Table 24 **Responses from owners of quality woodlots to a question relating to whether or not there is enough information available on private land forestry opportunities**

	Response					
	Yes		No		Uncertain	
Region	n	%	n	%	n	%
Minitonas	2	15	4	30	7	54
Piney	6	10	24	42	27	47
Turtle Mtn.	0	0	2	25	6	75
Total	**8**	**10**	**30**	**39**	**40**	**51**

Harvest Histories on Properties with Quality Forest Resources

Thirty-four of 83 respondents (41%) harvested wood products from their lands during the last five years (Figure 5). The percentages of harvesters and non-harvesters varied only about 10% among areas.

Figure 5 **Marital status and gender of respondents with high quality woodlots**



Fuelwood was by far the most commonly harvested product both overall and among areas (Table 25). Pulpwood and Christmas trees each were harvested in only one of the three areas, posts and rails in two of the areas, and sawlogs in all areas.

Table 25 Products harvested during the last five years by owners of quality woodlots

Product	Minitonas		Piney		Turtle Mtns.		Total	
	n	%[1]	n	%	n	%	n	%
Pulpwood	0	0	6	26	0	0	6	18
Sawlogs	1	14	4	17	1	25	6	18
Fuelwood	6	86	18	73	4	100	28	82
Posts/rails	0	0	5	21	1	25	6	18
Christmas trees	0	0	4	17	0	0	4	12
Number respondents	7		23		4		34	

[1] All percentages are computed from number of respondents. Multiple answers are possible within categories.

Most owners who harvested wood products used all or part of the product themselves (Table 26). In Minitonas and Turtle Mountain all harvesters used their own wood. Of those who sold products, most delivered directly to the buyer, some sold at roadside, and some delivered to a mill. Most overt commercial activity as indicated by sales or deliveries occurred in Piney.

Table 26 Methods of marketing of forest products harvested by owners of quality woodlots

Method	Minitonas		Piney		Turtle Mtns.		Total	
	n	%[1]	n	%	n	%	n	%
Roadside	0	0	2	8	0	0	2	6
Delivered to buyer	1	14	7	30	1	25	9	27
Delivered to mill	0	0	4	17	0	0	4	12
Own use only	7	100	17	74	4	100	28	82
Other	0	0	1	4	0	0	1	3
Number respondents	17		23		4		34	

[1] All percentages are computed from number of respondents. Multiple answers are possible within categories.

Two-thirds of the 48 owners who had not harvested wood products simply wanted to preserve their woodlots (Table 27). An overall lack of supply, and trees of insufficient size also thwarted harvest. Lack of time and assistance, and not knowing markets also were mentioned as reasons for not harvesting forests. Small sample size precludes comparison among areas.

Table 27 Reasons for not harvesting wood products given by owners of quality woodlots

Reason	Minitonas n	Minitonas %[1]	Piney n	Piney %	Turtle Mtns. n	Turtle Mtns. %	Total n	Total %
Not enough time	0	0	8	23	1	25	9	19
Do not know market	2	20	4	12	2	50	8	16
Lack labor/assistance	1	10	4	12	0	0	5	10
Prices too low	1	10	3	9	0	0	4	8
Not enough wood	1	10	9	27	1	25	11	23
Trees too small	1	10	8	23	1	25	10	21
Want to preserve woodlot	5	50	25	73	2	50	32	67
Other	2	20	1	2	0	0	3	6
Possible n	10		34		4		48	

[1] All percentages calculated from possible n; multiple answers possible within categories.

Management Potentials on Properties with Quality Forest Resources

Landowners were asked to indicate any forestry activities they had completed during the last five years (Table 28). Cutting of fuelwood was the most common practice, but culling and tree planting also were mentioned frequently. On a percentage basis, tree planting was more significant in Turtle Mountain and culling in Minitonas. In Piney, more landowners reported a higher number of activities.

Table 28 Forestry activities during the last 5 years of landowners who own more than 40 acres of quality woodland

Activity	Minitonas[1] No.	Minitonas[2] %	Piney No.	Piney %	Turtle Mtn. No.	Turtle Mtn. %	Total No.	Total %
Cutting fuelwood	10	77	23	46	5	71	38	54
Culling	7	54	24	28	2	29	33	47
Tree planting	3	23	18	36	3	43	24	34
Wildlife habitat	2	15	13	26	2	29	17	24
Trail development	3	23	8	16	2	29	13	19
Logging (pulp or sawlogs)	1	8	10	20	1	14	12	17
Tree thinning	1	8	10	20	0	0	11	16
Christmas tree harvest	2	15	7	14	0	0	9	13
Road building	1	8	2	4	0	0	3	4
Total	**13**		**50**		**7**		**70**	

[1] Multiple answers are possible.
[2] Percentages are based on number of respondents who answered the question.

Fifty-five landowners indicated various interests in managing their woodlots (Table 29). Wildlife habitat and the need for shelter were most frequently mentioned, but replacing trees, fostering soil and water conservation and expanding forest resources also were commonly listed. Overall, there is considerable diversity and balance among reasons suggested for management.

Table 29 **Reasons for establishing tree cover listed by landowners with more than 40 acres of quality woodland who were interested in managing their forest resources**

Reasons	Minitonas No.[1]	% [2]	Piney No.	%	Turtle Mtn. No.	%	Total No.	%
Wildlife habitat	5	71	28	68	2	33	35	64
Shelter	7	88	22	54	3	50	32	58
Replace trees	4	57	22	53	2	33	28	51
Soil-water conservation	5	71	18	43	4	67	27	49
Expand forest resources	0	0	21	51	1	17	22	40
Recreational use	3	42	12	29	1	17	16	29
Other	0	0	2	4	1	17	3	6
Total n possible	**8**		**41**		**6**		**55**	

[1] Multiple answers possible.
[2] Percentages based on total number respondents.

Some obvious variations occurred among areas. For example, no owners in Minitonas were interested in expanding forest resources, while half of the respondents in Piney listed this as a management goal. Similarly soil and water conservation was more important in Minitonas and Turtle Mountain than it was in Piney. These differences reflect the significant geographical variations among study areas.

Landowners who expressed little or no interest in forest management during the last five years were asked whether or not they thought they would be interested in tree planting or management during the next five years. Of 39 responses, 8 (20%) said yes, 13 (33%) said no, and 18 (46%) were uncertain. A more positive response was received to a question regarding realizing increased benefits from woodlots. Fifty-seven owners answered, with 40 positive responses (70%), and 17 negative responses (30%).

Landowners who expressed interest in management were asked to priorize future activities. The most frequently mentioned reason was to improve or increase wildlife habitat, but production of fuelwood, other forest products and recreation also were important. Priorities were high for all reasons, but forest products received the highest overall rating among the major reasons listed.

Table 30 **Priority of management strategies listed by owners of quality woodlots who wanted to increase the benefits from their forest acreage**

	Response scale[1]													
	1			2			3			4			Total	Rating
Reason	M	P	T[2]	M	P	T	M	P	T	M	P	T	(n)	($\bar{x}$)
Wildlife habitat	4	13	1	2	9		2	9		1			41	1.9
Personal fuelwood	5	5	1	4	10		1	2					28	1.7
Forest products	2	15	1	1	6		1	1					27	1.4
Recreation	4	6	1	1	4			2			3		21	1.9
Environmental concerns			3										3	1.0

[1] A response of 1 is highest rating.
[2] M = R.M. of Minitonas, P = L.G.D. Piney, T = R.M. of Turtle Mtn.

Landowners were asked for a scaled response to a question relating to the institution of a private forest management plan in Manitoba (Table 31). Strong agreement was recorded by nearly half of the 83 respondents. This response was strongest in Piney. An additional 17% agreed moderately, so more than 60% of all owners favored instituting a program. Only 8% moderately or strongly disagreed, and 10% expressed no opinion.

Table 31 **Responses from landowners with quality woodlots to the statement that "A provincial woodlot management program should be developed to assist the private forest landowners of Manitoba in management of their forest resource."**

	Region						
	Minitonas		Piney		Turtle Mtn.		Total	
Scale	n	%	n	%	n	%	n	%
Strongly agree	5	30	30	52	2	25	37	45
Moderately agree	4	24	9	15	1	12	14	17
Neutral	5	30	9	15	3	38	17	21
Moderately disagree	0	0	1	1	1	12	2	2
Strongly disagree	2	11	3	5	0	0	5	6
No opinion	1	5	6	10	1	12	8	10
Total	**17**	**100**	**58**	**100**	**8**	**100**	**83**	**100**

Three choices were presented to owners regarding the type of management program preferred, and they were asked to priorize selections. Fifty-six respondents gave information and education programs an average rank of 1.5. Identical lower rankings of 2.0 were computed for programs that included technical assistance or financial assistance. The fact that nearly all responding landowners listed all three options, however, suggested a need for comprehensive programs.

Table 32 Priorities listed by owners of quality woodlots for management programs instituted by government

	Priority scale										
	1			2			3			Total	Rating
Priority item	M	P	T	M	P	T	M	P	T	(n)	($\bar{x}$)
Information and education	8	30	3	2	2	0	1	9	1	56	1.5
Technical assistance to owner	2	9	1	5	25	2	5	6	1	56	2.0
Financial assistance or incentives	4	11	3	5	14	1	4	11	1	54	2.0

Landowners suggested that the provincial government, a federal-provincial joint venture, or a combination of all levels of government should be responsible for initiating a program (Table 33). Few thought that private woodlot management was solely a federal or private responsibility. There was little variation among regions on the question of jurisdictional responsibility.

Table 33 Landowners' views on responsibility for implementing a private woodlot management program

	Region 1							
Responsible group	Minitonas		Piney		Turtle Mtn.		Total	
	n	%	n	%	n	%	n	%
Federal government	1	10	0	0	1	17	2	4
Provincial government	4	40	11	29	2	33	17	32
Private organizations	1	10	2	5	1	17	4	7
Federal/provincial	3	30	11	29	1	17	15	28
All levels government	1	10	14	37	1	17	16	30
Totals	**10**	**100**	**38**	**100**	**6**	**100**	**54**	**100**

ANALYSIS AND DISCUSSION

The division of surveys according to the amount and quality of forested land on a private holding was intended to reflect differences in both historical and potential future management attitudes and behaviours. The purpose of including an area virtually devoid of woodlots (R.M. of Rhineland) was intended to identify the desire of "prairie farmers" to reforest portions of their properties for either aesthetic, protective or commercial purposes. Inclusion of the L.G.D. of Piney allowed interpretation of landowners' attitudes in an area with a history of forest utilization, while the R.M.'s of Turtle Mountain and Minnitonas reflected typical farming areas in western Manitoba, one in the prairie region and one in the Parkland belt. The division of respondents by size and quality of woodlot was easily superimposed on three areas where variety occurred in forest resources.

Respondents varied little between categories and among areas in personal characteristics. Age distributions, marital status and gender of respondents were virtually identical in the overall samples and within subgroups (Tables 1 and 12). Similarly, there were only minor differences in ownership status (Tables 2 and 15) between owners of limited and high quality woodlots. Management efforts, therefore, can be standardized to these parameters.

Owners of high quality woodlots, however, were much less likely to be farmers than those with limited forest resources (Tables 3 and 14). This difference primarily reflects clearing on farmed lands, and diversity of ownership in L.G.D. Piney, which does not lie in a good farming area. Retired owners were the second most frequent group among owners in both categories, reflecting the high overall age of rural landowners. Non-farmers and farmers may interpret biological management concepts differently, and this may be a consideration in devising woodlot programs.

The variation that occurs in educational backgrounds of owners both within and between the categories of limited and quality woodlots may be significant when designing woodlot programs. The fact that more than one-third of owners in both surveys had less than 12 years of formal education stands in contrast to the one-fourth of owners in limited resource areas, and one-third in quality woodlot areas who have either college or university training (Tables 4 and 15). Any management programs will have to be directed to the reading and interpretation abilities of the owners. In this case, variations may have to be built in to educational materials, or each individual may have to be assessed and plans tailored to the abilities of the owner. Owners of high quality woodlots are most diverse in educational background (Table 16) and have more varied work experience (Table 20), making them the most difficult group to accommodate. These owners also are more widely distributed with respect to location of their woodlots than are owners with limited forest resources (Tables 7 and 13). This may make program delivery more difficult.

Properties with quality woodlots were smaller on average than those with woodlots of limited size (Tables 5 and 17). This, however, was evident only in Piney, and reflects the dominance of Piney in the quality woodlot data. What is implied, however, is that quality and size of property are not necessarily corollary. Many small properties may contain valuable trees while extensive properties may contain forests of poor quality. Extreme variability was obvious in property size.

The significance of lack of relationship between size of property and quality of woodlots lies in the need to assess the potential of individual properties rather than assume that single policies or programs will be appropriate for a given region. At the very least, several optional programs will have to be available to accommodate variations within and between areas. Overall, however, more than 80% of all properties in all areas are less than 640 acres in size. Some basic decisions will have to be made in program design to accommodate the extreme variability in properties in all survey regions.

It was expected that high quality woodlots would be larger than limited woodlots because of the 40 acre limit imposed. The forested acreage on properties with limited forestry potential, however, ranged from 0 to 1000, while that on properties with quality forests ranged from 40 to 800 acres (Tables 6 and 18). Non-parametric analysis based on cumulative statistics suggests significant differences ($P < 0.05$; Kolmogorov-Smirnov text) among areas in the size of woodlots, with greatest variation occurring in poor quality woodlots. As with overall property size, therefore,

management policies and programs may have to be designed to either allow a range of options, or to accommodate individual variations in resource potentials.

The overall percentage of landowners who have harvested wood products during the last five years varied little between quality and limited forest properties (Figures 3 and 5). Variations within the survey of limited resources, however, were greater, with the percentage of harvesters ranging from 20% to 50%, while the range among areas in the quality woodlot sample varied only between 40% and 50%. In Piney the percentage of harvesters was higher among small woodlot owners, while in Turtle Mountain the percentage of harvesters did not vary with woodlot quality.

Fuelwood was the most common product from all areas of both surveys (Tables 8 and 25). All but 3 of the 74 harvesters (96%) with limited resources, and 28 of the 32 harvesters (82%) with quality woodlots cut firewood. Respondents with small woodlots, however, used more fuelwood themselves, while both domestic and commercial fuelwood operations were more common if quality forest resources were available (Table 26). Sawlogs, posts and rails, and Christmas trees, however, were equally represented as products in both surveys. Differences in the scale of operations may be involved, but cannot be ascertained from the data.

Even in areas with high quality resources, however, personal use of products was reported by 82% of the respondents (Table 26). Data suggest that landowners did not read this question carefully, as "own use only" was listed by 28 of 34 owners, but 9 owners checked "delivered to buyer." It is possible that some products were used domestically while others were sold. It would appear that about 75% of the owners use their own products and 25% sell products. This ratio was surmised from the fact that 44 responses were received from 34 respondents. Other than personal use, direct delivery to a buyer or mill were most frequently mentioned methods of marketing.

Approximately 60% of all landowners responded to questions concerning why they have not harvested wood products (Tables 9 and 27). Owners with limited forest resources most frequently stated that they did not have enough wood to warrant harvest, and that they wished to protect what they had (Table 9). Owners with larger holdings also wished to preserve woodlots, but overall lack of wood was mentioned less often, and was ranked similarly to insufficient size of trees, lack of time to harvest, and lack of market information (Table 27).

The two surveys differed in the sections concerning awareness of forestry practices and management potentials. This difference was predicated on the assumption that small woodlot owners would be less aware, and therefore less interested in management. Readers are reminded that properties in the two surveys may be adjacent in all areas except Rhineland where extensive woodlots did not exist.

Two-thirds of the respondents with less than 40 acres of quality forest felt that they were aware of the availability of tree stock (Figure 4A), but only 40% felt that enough information was available (Figure 4B), or that they knew how to access information (Figure 4C). Strong variation occurred among areas in all of these perceptions, suggesting existence of and access to that information should be addressed as a first consideration in management strategies directed toward small woodlot owners.

Whether or not owners of limited forest resources want, and would use this information may depend on how programs are presented. Only about half of the owners answered, and about one-fourth of the respondents said they would be interested in future management, but an additional 36% were uncertain of their future interest (Table 11). In total, therefore, 62% of this group either are interested, or may be interested in management. To be successful on a meaningful scale, a program for small woodlots would have to be "sold" to many owners.

The direction for these programs, however, are suggested by responses received to a question concerning reasons for establishing or managing tree cover (Table 10). Providing shelter, increasing wildlife habitat and soil and water conservation were by far the most frequently desired results. This strongly suggests that small woodlot programs aimed at increasing forest resources should be designed to complement protection of home sites and agriculture rather than emphasize significant gains from forest products alone.

Owners of larger quality woodlots showed a much broader range of interests for establishing or managing tree cover on their properties (Table 29). Provision of wildlife habitat was most frequently mentioned, but shelter also was important. Half of the owners also listed replacement of harvested or cleared trees and soil and water conservation as important. Of greatest importance to management, however, is the fact that 40% of the respondents expressed interest in expanding their forest resource base.

In total, owners of large woodlots would best be served by a multi-faceted program that offered a combination of strategies that could be tailored to the desires of owners. Clearly suggested in the data are a variety of ownership categories ranging from farmers to exurbanites. Since properties owned by these people may occur in the same area, a balanced regional program may be able to coordinate all of the interests expressed. Some potential conflicts, such as an increase in some wildlife species in farm areas, may be buffered through judicious spatial planning of forest management.

Owners of quality forest resources listed a wide variety of activities during the previous five years (Table 28). Some of these were purely harvest related, but others such as culling, tree planting, and tree thinning show that some active management is already occurring. This may provide a base upon which to establish demonstration projects, or education and information seminars. If especially well-managed woodlots are located, they may serve as centres for hierarchial dissemination of management strategies. Diffusion of innovation from local residents often is an effective way to foster new programs and change perceptions and attitudes over time (Hagerstrand 1962).[2]

The more "commercial" interests of owners of extensive forest resources also is reflected in lower activity in the more aesthetic interests of wildlife habitat and trail development. This, however, stands in contrast to the expressed interest in establishing tree cover (Table 29). These two sets of data are not necessarily contradictory. Past and future activities may be complementary in that priority of action is established, or changes in perceptions or values may be occurring. However, there also could be a distinct separation of owners who perceive commercial value in trees, and those who view woodlots as aesthetic landscape features.

Responses to a multi-faceted program would allow definition of the number of owners interested in various management activities over time. The strength of potential commitment to various strategies was addressed preliminarily by the priorities listed by landowners (Table 30). Although provision of wildlife habitat was most frequently mentioned, increasing forest products and provision of more fuelwood were higher priorities when averaged among respondents. Differences in ratings, however, were not great, suggesting that programs to increase production of wood products should include wildlife and recreation considerations, and vice versa.

Demand for a private woodlot management program was strong (Table 31), with 62% of the 83 respondents in agreement. A balanced program combining information and education, technical assistance and financial incentives was suggested (Table 32). Data indicate that information and education are in greatest demand (highest priority rating). This, however, may reflect a cautious approach by landowners in that they want to know more about the benefit/cost aspects of forest management before they either invest their own monies, or ask for government assistance. Thus, a step-wise program is recommended. First, information and education may be used to stimulate interest and initiate management. Second, technical assistance may be needed to actualize initial strategies in the field. This may be more physical/mechanical than financial in scope. Third, if interest and projected outcome are great enough, appropriate financial programs may be instituted to allow extensive long-term forest management on private lands. Landowners clearly indicate that the Provincial government, either singly or in combination with the Federal government or private organizations, should be responsible for the programs (Table 33).

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2 Brief comparisons with Hreno's (unpublished) preliminary study show similar responses to questions that were worded the same . Hreno's study area was less agricultural in nature, and most variations in results related to this difference among our study sites and his areas. No responses to similar questions were so divergent as to obviate the conclusions of either study. Many questions relating to management and use of woodlots, however, were not similar enough to allow direct comparison.

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APPENDIX A

Went to owners with >40 acres of cutting class 4 or better.
40+ acres considered operable.

1989 Private Forest
Land Owner Questionnaire

NAME: _____

WOODLOT LOCATION: SEC _____ TWP _____ RGE _____

ADDRESS _____ BOX NO. _____

CITY/TOWN _____

PROVINCE _____ POSTAL CODE _____

PHONE NUMBER _____

INSTRUCTIONS: If more than one applies, please number in order of preference. For example, 1, 2, 3, 4, etc.

1. Why do you own forested land?

Personal residence _____

Seasonal residence _____

Shelter _____

Recreational use _____

Land inherited _____

Sale of forest products _____

Wildlife habitat _____

Heritage for the future _____

Hunting _____

Aesthetic reasons _____

Personal fuelwood supply _____

Tax incentives _____

Financial investment _____
(Real Estate)

Other reasons (Please specify below)
_____

_____

COMMENTS: _____

_____

_____

2. Please respond to the following statements by circling the number which corresponds to a number from the scale below. You may think of the numbers being: 1, strongly agree; 2, moderately agree; 3, neutral; 4, moderately disagree; 5, strongly disagree; 6, no opinion.

a)	I am aware of the extent of forested land on my property.	1	2	3	4	5	6
b)	I am aware of the tree species which exist on my property.	1	2	3	4	5	6
c)	Generally, I am aware of their age and condition.	1	2	3	4	5	6

3. Approximately how many acres of land do you own? _____ acres.

4. Approximately how many acres of your land would you consider as treed or forested? _____ acres.

5. Do you consider your trees to be healthy?

Yes _____ No _____ Uncertain _____

6. Would you be interested in learning more about private land forest management? (Check one) Yes _____ No _____

Comments (Why or Why not) _____

_____

7. Are you aware of any marketing opportunities in your area for the following forest products?

Pulpwood	Yes _____	No _____
Sawlogs	Yes _____	No _____
Fuelwood	Yes _____	No _____
Fenceposts/rails	Yes _____	No _____
Christmas trees	Yes _____	No _____

Other (Please specify) _____

_____

_____

8. Have you harvested forest products from your forested land in the past five years? Yes _____ No _____

9. If yes, please write in the product(s) and check the applicable method(s) of selling used.

Product(s) _____ _____

_____

Method(s) of selling

Sold at roadside _____

Delivered to buyer _____

Delivered to sawmill or pulpmill _____

Other (please specify) _____

_____

Trees harvested for own use _____

10. If you have not harvested any forest products from your forested land in the last vie (5) years, what is your main reason for not having done so? (check one)

I am too busy with other activities _____

I do now know what or how to sell _____

I cannot do the work myself and am unable to find reliable workers _____

Prices are too low _____

I do not have enough wood to make it worthwhile _____

Trees are not large enough to cut for any purpose _____

I do not want my woods cut _____

I cannot find a buyer _____

Other (please specify) _____

_____

11. Do you feel there is enough information on private forested land opportunities available to land owners?

Yes _____ No _____ Uncertain _____

12. **Which of the following activities, if any, have you undertaken in your forested land in the last five (5) years? (check as many as apply)**

Tree planting or preparation for tree planting _____

Tree thinning or spacing _____

Roadbuilding _____

Wildlife habitat improvement _____

Logging (pulpwood, sawlogs, etc.) _____

Cutting firewood _____

Building hiking or cross-country ski trails _____

Cutting Christmas trees _____

Other (please specify) _____

_____

_____

13. Are you interested in planting trees on your property for purposes of? (Check as many as apply)

Soil and water conservation Yes ____ No ____

Expanding your forest resource Yes ____ No ____

Replacing dead or harvested trees Yes ____ No ____

Wildlife habitat Yes ____ No ____

Shelter Yes ____ No ____

Recreational use Yes ____ No ____

Other (please specify) Yes ____ No ____

_____

_____

I am not interested in planting trees on my property _____

14. If not interested in planting trees on your property at present, do you expect to undertake tree planting or any type of forest stand improvement in the next five (5) years?

    Yes _____ No _____ Uncertain _____

    If yes, please specify type of activity _____

    _____

15. Would you be interested in managing your woodlot so as to increase the benefits from your forested land?
    Yes _____ No _____

16. If yes, please classify the type of woodlot management which interests you. If more than one applies, please number in order of preference. For example: 1, 2, 3, etc.

    a) Woodlot management for recreation _____
    (please specify type of recreation below)

    _____

    _____

    b) Woodlot management for sale of forest products _____
    (please specify type of commercial production, ie sawlogs, Christmas trees, firewood, etc.)

    _____

    _____

    c) Woodlot management for PERSONAL firewood supply _____

    d) Woodlot management for wildlife habitat _____
    (Please specify, ie, deer, moose, grouse, songbirds, etc.)

    _____

    _____

    e) Others (please specify) _____

    _____

    _____

17. Please respond to the following statement by circling one of the numbers which corresponds to a number from the scale below. You may think of the numbers as being: 1, strongly agree; 2, moderately agree; 3, neutral; 4, moderately disagree; 5, strongly disagree; 6, no opinion

    State: A Provincial woodlot management program should be developed to assist the private forest land owners of Manitoba in the management of their forest resource. 1 2 3 4 5 6

17. (Continued)

COMMENTS _____

_____

_____

18. If such a program were established, what would you consider the order of priority to be? List in order of preference. ie. 1, 2, 3, 4, etc.

Woodlot information and education _____

Technical assistance available to the land owner _____

Financial assistance or incentives _____

Other (explain) _____

_____

_____

19. If in favor of a provincial woodlot management program, do you see it functioning with the assistance of: (Check as many as apply)

Provincial Government _____

Federal Government _____

Private Sources _____

Other (please specify) _____

_____

_____

20. If you are in agreement with the statement in question 17, please provide your comments as to what direction you feel a provincial woodlot management program should take. Write on back of page if necessary.

_____

_____

_____

_____

PERSONAL CHARACTERISTICS

Your answers to the following questions will help us better understand who are the private forest land owners in Manitoba.

21. Please check the appropriate answer.

Your age:	16 - 20 years _____	Marital Status:	Single _____
	21 - 30 _____		Married _____
	31 - 40 _____		Widowed _____
	41 - 50 _____		
	51 - 60 _____	Sex:	Male _____
	Over 60 _____		Female _____

22. Do you live full-time on your forested property or within one mile?

Yes _____ No _____

23. If no, how far from your forested land do you reside?

Less than 50 miles _____ Between 50 - 100 miles _____

Greater than 100 miles _____

24. What is your main occupation? (check one)

Farming	_____
Woodworker	_____
Labourer-wage earner	_____
Clerical - office worker	_____
Skilled trade, (please specify)	_____
Own business	_____
Office manager	_____
Professional, (please specify)	_____

24. What is your main occupation? (cont'd)

Homemaker _____

Retired _____

Other (specify below) _____

_____

_____

25. What is the highest grade or level of education you have completed? (Check one)

Less than high school _____

High School _____

College/technical diploma _____

University degree _____

Other (specify) _____

_____

_____

26. Who owns this forested property? (Check one)

You only _____

You and your spouse _____

Partnership (2 or more individuals other than you and your spouse) _____

Undivided estate _____

Other (Specify below) _____

_____

_____

_____

APPENDIX B

Went to landowners with (acres of cutting class 4 or better.
(acres not considered operable.

1989 Land Owner Questionnaire

NAME: _____

WOODLOT LOCATION: SEC _____ TWP _____ RGE _____

ADDRESS _____ BOX NO. _____

CITY/TOWN _____

PROVINCE: _____ POSTAL CODE _____

PHONE NUMBER _____

1. Approximately how many acres of land do you own? _____ acres.

2. Approximately how many acres of your land in this location are in tree or scrub cover? _____ acres.

3. Where do you live in relation to your property location? (Check one)

   On my property or within 1 mile of it _____

   1 - 50 miles of my property _____

   51 - 100 miles distant _____

   More than 100 miles distant _____

4. Are you interested in establishing (planting), or managing the existing tree cover on your property for purposes of: (Check as many as apply)

   Soil and water conservation Yes ____ No ____

   Expanding your forest resource Yes ____ No ____

   Replacing dead or harvested trees Yes ____ No ____

   Wildlife habitat Yes ____ No ____

   Shelter Yes ____ No ____

   Recreational use Yes ____ No ____

   Other (please specify below) Yes ____ No ____

   _____

4. (Cont'd)

I am not interested in establishing, or managing the existing tree cover on my property (check if applicable) (____)

Comments: _____

_____

_____

5. If not interested in establishing/managing trees on your property at present, do you expect to undertake tree planting or any type of forest stand management in the next five years?

Yes _____ No _____ Uncertain _____

If yes, please specify type of activity _____

_____

_____

6. Have you harvested forest products (see question 7) from your land in the past five years?

Yes _____ No _____

7. If yes to question 6, please check the applicable product. (Check as many as apply)

Pulpwood	Yes _____	No _____
Sawlogs	Yes _____	No _____
Fuelwood	Yes _____	No _____
Fenceposts/Rails	Yes _____	No _____
Christmas trees	Yes _____	No _____
Others (please specify)	Yes _____	No _____

_____

_____

_____

8. If you have not harvested any forest products from your land in the last five years, what is your main reason for not having done so? (Check one)

I am too busy with other activities _____

I do not know what or how to sell _____

I cannot do the work myself and am unable to find reliable workers _____

I do not have enough wood to make it worthwhile _____

Trees are not large enough to cut for any purpose _____

I do not want my trees cut _____

I cannot find a buyer _____

Others (please specify) _____

_____

_____

9. Do you know where to acquire tree planting stock (seedlings)?

Yes _____ No _____

Comments: _____

_____

_____

10. Do you believe there is enough information available on woodlot management?

Yes _____ No _____

11. Do you know where to obtain this information?

Yes _____ No _____

PERSONAL CHARACTERISTICS

Your answers to the following questions will help us better understand who are the agricultural land owners in Manitoba.

12. Please check the appropriate answer

Age		16 - 20 ____
		21 - 30 ____
		31 - 40 ____
		41 - 50 ____
		51 - 60 ____
		Over 60 ____
Marital Status		Single ____
		Married ____
		Widowed ____
Sex	Male ____	Female ____

13. Who owns the land? (check one)

You only	_____
You and your spouse	_____
Partnership (two or more individuals other than you and your spouse)	_____
Undivided estate	_____
Other (please specify)	_____

_____

_____

_____

14. What is your main occupation? (Check one)

Farming ____

Woodsworker ____

Labourer - wage earner ____

Clerical - office worker ____

Skilled trade (please specify) ____

Own business ____

Office Manager ____

Professional (please specify) ____

Homemaker ____

Retired ____

Other (please specify) ____

_____

_____

15. What is the highest grade or level of education you have completed? (Check one)

Less than high school ____

High school ____

College/Technical Diploma course ____

University degree ____

Other (please specify) ____

_____

_____

APPENDIX C

Cover Letter

Dear Landowner:

ARE YOU CONCERNED?

about

Trees for Forest Products
Heritage
Style of Life
Development of Rural Industry
Wildlife Habitat

As you may be aware, woodlots can provide a variety of benefits to a landowner and a community. These benefits might include recreational use, increased or improved Wildlife Habitat, Soil and Water Conservation, Heritage Trees, Forest Products, or simply a desired style of life.

With this in mind, the Forestry Branch, of Manitoba Natural Resources is conducting a **woodlot interest** survey.

You have been selected to participate in this survey. **Your** answers to this questionnaire will be instrumental in determining a woodlot program for Manitoba. It is **Your** land, **Your** trees and the program will be designed to assist **You** in managing **Your** woodlot. We need your help!!!

THANK YOU FOR PARTICIPATING

ALL NAMES OF THE PEOPLE COMPLETING AND RETURNING THE QUESTIONNAIRE WILL BE ENTERED IN A DRAW TO RECEIVE A COMPLEMENTARY BOOK. FOUR (4) PEOPLE WILL RECEIVE A COPY OF "THE BUTTERFLIES OF MANITOBA", RECENTLY PUBLISHED BY THE MUSEUM OF MAN AND NATURE. FOUR (4) MORE WILL RECEIVE A COPY OF "THE WOODLAND STEWARD" AND ANOTHER FOUR (4) WILL RECEIVE A COPY OF "SUCCESSFUL FORESTRY - A GUIDE TO PRIVATE FOREST MANAGEMENT".

We sincerely appreciate your assistance and co-operation.

Yours truly,

F. W. McKinney
Resource Extension Officer